

plained that he had obtained this by taking an ants' nest and heating it, then beating the heat-softened nest with a stone.

Upon examination I found the ants in question had built nests in the rocks up to 6 in. high, around the base of a spinifex clump, and also covered runways or tunnels from clump to clump of spinifex. Resin from the spinifex stems had been incorporated in the earthy substance of the nests, but how this was done I cannot explain.



Nest of *Iridomyrmex rostrinotus* with spinifex gum.

Previously this information had been partly tendered by Malcolm, an Aboriginal in the employ of Mr. R. Parsons of Coolawanyah Station. This was in June 1957 during the visit of the W.A. Museum collecting trip to Millstream and Tambrey, and Malcolm was loaned us as a guide.

I have seen the same ants at Onslow, throughout the Hamersley Ranges, at Barrow Island and at Halls Creek. Examples collected at Barrow Island have been identified by Mr. A. M. Douglas, of the W.A. Museum, as *Iridomyrmex rostrinotus* Forcl, a central Australian species.

—W. H. BUTLER, Bayswater.

OBITUARY

Dr. KEITH SHEARD

On June 15, 1965 there died at Nedlands Dr. Keith Sheard, a many-talented Western Australian, whose striving to make natural history a career, despite the haps and mishaps of fate, was eventually realised with success, even though his closing years were to be clouded with disappointment. An outline of his unusual career may not be without interest to present-day students whose lines are cast in more pleasant places.



Keith Sheard, November 1960.

—Photo "West Australian"

Keith was born at Cue on October 21, 1903 and he was nine years old before he began to receive any formal schooling. Until then he had been taught by his mother whilst his parents were at the Flint Cliff Telegraph Station at Hamelin Pool, Shark Bay. She was the only white woman he would have seen for several of those years. His younger brother was the only other white-skinned child. The natives were their companions and Keith learnt a lot from them of the surrounding Shark Bay country. Years later, as a result of those early contacts, he was able to obtain for N. B. Tindale, the South Australian anthropologist, useful data on the Aborigines of the Shark Bay area (cf. *Trans. Roy. Soc. S.A.*, 64, 1940: 210). When his father was transferred to Darwin for two years Keith went to Kalgoorlie to live with a family friend, the Rev. F. Scarle, and carried on his education at the North Kalgoorlie and Eastern Goldfields High Schools. He matriculated in 1923 and simultaneously started a degree course and training as a teacher. For financial reasons he had to abandon the former and it was

28 years before opportunity again enabled him to pursue academic life towards the winning of degrees.

He was appointed a monitor on probation at the Perth Boys' School, James Street, in February, 1923, and was a student at the Teachers' Training College, Claremont, during 1924 and 1925. During 1926 and the first half of 1927 he was an assistant teacher at the Fairbridge Farm School and whilst there he was one of the party which entertained the Duke and Duchess of York (later King George VI and Queen Elizabeth) when they visited the Farm School. Whilst he was a monitor at the Perth Boys' School he made a discovery which led to a spate of local research on freshwater crustacea. While collecting specimens for the biological laboratory (then in the charge of the late Hal McKail) he collected at Smith's Lake*, North Perth a creature which Mr. L. Glauert, at the W.A. Museum, recognised as the first representative to be found in Western Australia of a remarkable group of freshwater isopods then becoming known in eastern Australia through the researches of Professor Charles Chilton and others. Glauert described it as a new species, *Phreatoicus palustris* (*Journ. Roy. Soc. W.A.*, 10, 1924: 49). The creature proved to be quite common in Perth swamps and it is strange that it should have eluded discovery by the Hamburg Expedition of 1905 or by that assiduous limnologist, the late Professor W. J. Dakin when he held the chair of biology at the local University. The current occupant of the chair, Professor G. E. Nicholls, became intensely interested in the group, described other local species and subsequently made it his major research interest in the Australian fauna. Sheard himself later described another new species of the group from Victoria.

These Perth years in the 1920's provided Sheard with opportunities for developing other interests. At Kalgoorlie he had become a King's Scout and when he moved to Perth in 1922 he became Assistant Scoutmaster to Mr. J. G. Paterson, Scoutmaster of the 44th Group, North Perth, which attained high efficiency at the time. Mr. Paterson subsequently became Chief Scout Commissioner and is now managing director of the publishing firm of Paterson Brokensha Pty. Ltd. Sheard's athletic prowess led him to become active in lacrosse, yachting on the Swan River and in competitive motor-cycling. He played with the Perth Lacrosse Club; a left hander he used the right hand crosse successfully, playing the attack and defence positions. About 1927 he represented the State in the game. He rode an F/N motor cycle and sidecar successfully on the Claremont Speedway and, though not a regular competitor, enjoyed the racing.

At the end of July, 1927 he took a step which as events turned out led to disaster. He resigned from the Education Department to take up farming at North Burraeoppin. He was not to know

*The actual collecting site was at the Chinamen's gardens at the north end of the lake, which occupied a depression along the west side of Charles Street, between Emmerson and Howlett Streets. It is marked as "Three Island Lake" in a survey of 1841 and its later name was derived from Bernard Smith who purchased the area in 1877. Its shores were subsequently used for market gardens and in recent times the lake itself was filled in as a rubbish tip. The area has now been levelled and is being developed for building purposes.

that the Great Economic Depression was just ahead. The farming venture turned out unsuccessful and Keith tried to retrieve the situation by other activities. Among these was one year's teaching, on supply during 1929, at the North Burracoppin School, taking on with a partner a mail transport contract, and part-time wheat lumping at the railway siding. The physical skill in wheat lumping appealed to him and he was intrigued with the performance of a husky lumper who could hoist a full bag of wheat under each arm and walk away with them. He didn't rest until he had mastered the art himself. However a serious accident at the lofty stacks of bagged wheat was to change the whole course of his life. He was crossing a plank between two stacks, with a bag of wheat on his shoulder, when one end of the plank became dislodged, giving way. Keith fell and was spread-eagled across the railway track with the bag of wheat across his back. He was taken to the Merredin Hospital and discharged after three weeks, still far from well. A short time afterwards he was stranded with his motor cycle and sidecar some miles from home and pushed the outfit for 15 miles before collapsing. On his admission to hospital this time the full extent of his earlier injuries was discovered. Unfortunately he sustained yet a third accident, perhaps consequent on the other two, falling from his horse, "Sonny", on which he used to make frequent trips into the surrounding bush. He received hospital treatment for hernia and was sent back, in a very ailing condition, to his family who were then living in Adelaide. These physical injuries put an effective end to any active life such as he had previously enjoyed. However, in his later academic life, his companions who were unaware of his earlier powers, were astonished when at times he exhibited an unwonted turn of physical prowess.

In Adelaide after he recovered sufficiently he took on various jobs, first as a Singer Sewing Machine salesman and collector and then as debit agent for the Metropolitan Life Assurance Company in the industrial suburbs of Bowden and Hindmarsh. Subsequently he left this to do honorary work at the South Australian Museum, as a protégé of the Director, the late Herbert M. Hale. He was appointed Honorary Assistant in Zoology in 1933 and the position became a full-time, paid, one in 1940. He did research on the amphipod and euphausiid crustacea, including the collections made in the Antarctic by Sir Douglas Mawson's expeditions. In South Australia, also, he developed his interests in chess, becoming South Australian Champion in 1941 (his chess achievements are discussed in *The Australasian Chess Review*, January 18, 1941, with portrait; and *Chess World*, 20 (3-4), 1965: 55-56; he himself contributed a light-hearted article in *Chess World*, 10 (1), 1955: 20-23). In Adelaide he met, and later married, Marianne (usually known as "Bon") Jackson, who survives him.

March 1, 1939 was the next significant date in his career. On that day he visited F.R.V. *Warreen*, of the Fisheries Section of the C.S.I.R. (as it then was) which had called in at Port Adelaide on its first South Australian cruise. This led to an association with

the leader of the Section, Dr. Harold Thompson, and to Sheard's gradually becoming involved in the plankton investigations supervised by Dr. Thompson. Eventually, in June, 1942, Sheard resigned from the South Australian Museum and joined the scientific staff of the Section. In May, 1945 he was transferred to Western Australia, his laboratory being at the University Department of Zoology. As the commercial crayfish industry rapidly expanded his research interests on crustacea included this species and he now devoted the bulk of his time towards its investigation, mainly in the Abrolhos region. The conservation of the crayfish exercised his concern from the outset, and the effective control of the catch with the establishment of the frozen tails trade to America worried him. Also as early as 1948 he suggested "escape gaps" for small crayfish in the catching pots but it was many years before the method was officially endorsed (Hugh Edwards, *Daily News*, December 18, 1964) and the system was incorporated in the 1965 legislation.

During his crayfish field work he was ever alert in advancing the cause of other branches of natural history and assisting other naturalists in their field work. Scientists who accompanied him on various trips included Professors H. W. Waring, B. J. Grieve, R. Fairbridge, Drs. A. R. Main and G. A. Bartholomew, Messrs. C. A. Gardner (*W. Aust. Nat.*, 1: 2), C. F. H. Jenkins, R. P. Roberts and numerous others. One incidental survey during one of his crayfish field trips, an exploratory cruise around the Monte Bello Islands in 1950, assumed some importance a few years later. This isolated group harbours an interesting fauna which has been diminishing over the years perhaps as a result of the deteriorating climate. The last thorough zoological survey was made in 1912 by a Cambridge University Expedition under P. D. Montague. In 1952 the islands were the scene of the testing of the first British Atomic Weapon, and so great was the secrecy attached to the operation that no satisfactory survey of the fauna was made. Most providentially, however, Sheard, knowing the zoological interest of the islands, had the perspicuity to make a brief survey of the terrestrial fauna and published the results in the *Western Australian Naturalist*. He showed that the last remaining mammal had disappeared since the Montague survey in 1912, and this timely inspection contributed to saving the British atomic team from being blamed for its extermination.

Whilst stationed at the University he took the opportunity of advancing his academic career. In December, 1950, on the recommendation of the Faculty of Science, he was granted the status of B.Sc. on the basis of his published works on crustacea, and proceeded to the degree of M.Sc. which was conferred on him in March, 1951. His thesis for the degree of D.Sc. was accepted in December, 1953. In March, 1958 he was elected by Convocation to the University Senate and remained a member until his death. In April, 1957 he became a member of the Standing and Statutes Committee of Convocation. He threw himself vigorously into University affairs and was outstandingly helpful to younger col-

leagues and students, going to endless trouble to assist them with literature referenees and speeialised adviee. His service to student affairs and problems was recognised by nomination to Honorary Life Membership of the Guild of Undergraduates just before his death. He extended his help in wider community effort. He was one of the founders of the Rottneet Biologieal Station, was on the executive of Torehbearers of Legacy, and was a prime mover some years ago in a proposal to establish an aquarium at Waterman's Bay.

Unfortunately in his professional career he fell into disfavour with his superiors in the Fisheries Division and was retrenehed at the end of 1961. He felt impelled to publish a volume of his crayfish investigations independently at his own expense, in 1962, but after retirement most of his work was confined to plankton studies in which he was supported by grants from the Exeeutive of the C.S.I.R.O. In an obituary notice Professor H. W. Waring, of the University Zoology Department, wrote that "his contribution to the crayfish industry of Western Australia will be generally appreciated only in the future."

In 1965 overtures were being made to Dr. Sheard from a university on the east eoast of the U.S.A., for a faeulty appointment in eonneetion with the establishment of a marine station. By then, however, it was discovered he had eaneer and he underwent treatment. His friends hoped that he would reeover and his demeanour and activity gave no indieation that his end was near. Only on the morning of his death he sent an apology for non-attendance at a meeting of the University finance committee of which he was a member and had intended to partieipate. The immediate cause of death, suddenly at his home, was pneumonia.

Finally, some tributes from long-standing friends. Professor Waring wrote: "Personally I shall miss the visits of a friend who had the virtues I prize most—integrity, eourage in adversity, and warm human kindness." And from Gilbert Whitley, retired ichthyologist at the Australian Museum, Sydney, when learning of Sheard's unexpected death: "Surrounded by books in his home, a lover of good music and an expert chess player, Keith the family man would gladly give of his time to diseuss some problem of taxonomy (arguing without raneour) or analyse graphs and tables of statistics. As he talked, he ran his hand through his hair and, as he smoked, his rather pale and lined face seemed to radiate a kindly intelligence, for his was a eultivated mind in a warm personality, and his wide reading and knowledge were always at the disposal of his friends. We met too at an oceasional science eongress. He seemed sensitive to eold, even in the mild Perth elimate, and I recall him, wrapped in muffler and overeoat as we crossed the University grounds between lectures; here he ealled eourage-ment to footballers on a foggy field and punted the ball in their direetion from the sideline. He was awarded the degree of D.Sc. by the University of Western Australia, yet how lightly he wore his honours, for unpretentious Dr. Sheard eonfided in me how warm his aademie robes kept him on a raw day. What a loss to us all is the